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SEVEN NEW SPECIES OF REARED BRACONIDAE  
(HYMENOPTERA).

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The following new species are described at this time in order to make the names available for use in economic entomology.

*Apanteles homoeosomae*, new species.

Most similar to *cacoeciae* Riley but distinguishable by the smoother face, propodeum, and basal abdominal tergites, the completely yellowish or whitish costa, and the longer ovipositor.

*Female*.—Length 2.5 mm. Head small, much narrower than the thorax; face smooth, not distinctly wider than distance from bases of antennae to apex of clypeus; antennae shorter than body; ocellular line not distinctly twice the diameter of an ocellus; eyes twice as long as broad; frons and vertex subopaque, not distinctly punctate.

Thorax not distinctly as high as broad; mesoscutum very finely punctate, the punctures not confluent; disk of scutellum polished, virtually impunctate; polished area on lateral face of scutellum semicircular, not nearly extending to the base; propodeum short and broad, very weakly punctate, with a very shallowly impressed or flattened area medially which is smooth and polished and more or less oval in form but is not defined by carinae; mesopleurum smooth and shining, with only faint punctures anteriorly; metapleurum smooth; stigma about twice as long as broad; first abscissa of radius definitely longer than intercubitus and slightly curved; posterior coxa smooth; calcaria of posterior tibia subequal, less than half as long as metatarsus.

Abdomen fully as long as thorax but much narrower; chitinized plate of first tergite practically parallel-sided, at least no broader at apex than at base, fully one and one half times as long as broad at apex, and with only a few weak punctures toward the sides; plate of second tergite completely polished, very short and broad, longest down the middle, its posterior margin arcuate; remaining tergites polished; ovipositor sheaths a little longer than posterior tarsus and at least as long as abdomen.

Deep black; palpi pale toward apex; wings whitish hyaline; costal margin entirely, and a large conspicuous spot at base of the otherwise blackish stigma, yellowish white; metacarpus blackish; veins mostly hyaline; apex of anterior femur, anterior tibia, and extreme bases of middle and posterior tibiae yellowish brown.

*Male*.—Essentially like the female except that the propodeum and first abdominal tergite are even less distinctly punctate, and the first tergite narrows gradually from base to apex.

*Type locality*.—Santiago de las Vegas, Province Havana, Cuba.

*Type*.—U. S. N. M. No. 50013.

*Host*.—*Homocosoma clectellum* Hulst in sunflower.

Described from one female and four males (including type and allotype) reared by S. C. Bruner, Sept. 4, 1933; two additional males reared by Mr. Bruner at Central Rosario, Province Havana, Cuba, Jan. 23, 1933; and two females and one male reared from the same host at Matthews, Mo., Aug., 1933, by R. B. Swain.

#### *Apanteles impunctatus*, new species.

Owing to the absence of an areola on the propodeum this species will not run to the section of my key<sup>1</sup> which contains *diatraeae* Musebeck, but it is, nevertheless, very closely related to that species. It may be further distinguished, however, by its completely impunctate mesoscutum, smoother first tergite, relatively broader and more convex face, paler legs, and shorter female antennae, which are not longer than head and thorax combined and have the second and following flagellar segments at least as broad as long.

*Female*.—Length 2 mm. Head slightly broader than thorax, unusually short and broad as viewed from in front; face swollen, twice as broad as long between bases of antennae and clypeus, smooth and shining; frons polished; antennal flagellum tapering apically; first flagellar segment thickening from base to apex, not more than one and one half times as long as thick at apex; temples convex.

Thorax unusually strongly depressed; mesoscutum, scutellum, and the pleura completely polished, impunctate; propodeum flat, scarcely declivous, smooth, with a few weak longitudinal striae on the middle; propodeal spiracles unusually large, separated from base of propodeum by one and one half times their diameter; anterior and middle legs very short; all femora somewhat thickened, the posterior pair about three times as long as broad; posterior tibiae short, strongly thickened apically; first abscissa of radius and the intercubitus subequal; nervellus strongly inclivous.

Abdomen about as long as thorax and somewhat narrower; the chitinized plate of first tergite narrowing slightly toward apex, much more than twice as long as broad at apex, smooth and shining, with only a little indefinite sculpture on basal half; plate of second tergite trapezoidal, about as broad at base as long, nearly twice as broad at apex as at base; following tergites polished; ovipositor sheaths a little shorter than posterior femur.

Black; antennae brownish yellow toward base; tegulae brownish; wings

<sup>1</sup>Proc. U. S. Nat. Mus., vol. 58, 1920, p. 487.

hyaline, stigma yellowish hyaline margined with brown; legs, including coxae, yellow or brownish yellow; posterior tibiae toward apex and their tarsi more or less infuscated.

*Male*.—Similar to female except for the longer and more slender and entirely testaceous antennae, which are as long as the body and have all the flagellar segments elongate.

*Type locality*.—Jeanerette, La.

*Type*.—U. S. N. M. No. 50014.

*Host*.—*Diatraea saccharalis* Fabricius.

Described from fifteen females and three males reared by Dr. W. E. Hinds, June 14, 1933, from a single host larva. In some of the paratypes the posterior coxae are more or less piceous toward base.

#### *Apanteles sorghiellae*, new species.

Closely resembling *flaviconchae* Riley: differing especially, however, in its more opaque and somewhat more punctate scutellum, in its unusually white wings with unpigmented veins, and in the shorter female antennae. From *hyphantriae* Riley, which it also resembles, it differs in the closely punctate scutellum, the narrower and entirely black abdomen, black tegulae, white wings, shorter ovipositor, and shorter antennae of the female.

*Female*.—Length 2 mm. Head strongly transverse; temples narrow but convex; eyes about twice as long as broad, converging slightly below; malar space inclined inward, about as long as basal width of mandible; face shining, nearly smooth, with only faint punctures; frons smooth; ocellular line about twice diameter of an ocellus; antennae definitely shorter than the body, the thirteenth to seventeenth segments not distinctly longer than broad, the last segment conical, longer than broad.

Thorax at tegulae distinctly broader than head; mesoscutum and scutellum closely punctate, subopaque; scutellum rather large, only slightly convex; propodeum closely finely rugulose except narrowly across the base, and with a distinct median longitudinal carina; mesopleurum closely punctate anteriorly, polished posteriorly, and with a short, very narrow longitudinal groove in the polished area; mesosternum shallowly but distinctly punctate; metapleurum polished on basal half, rugose beyond; posterior coxae weakly punctate and subopaque outwardly; calcaria of posterior tibia subequal, not distinctly half as long as metatarsus; stigma about as long as metacarpus; radius faintly inclined outwardly, not sharply angled with intercubitus; nervellus strongly inclivous, scarcely curved.

Abdomen not distinctly as long as thorax and much narrower, compressed at apex, even narrower than apical width of propodeum, first tergite broadening gradually behind; the second transverse, more than twice as long as wide, and definitely shorter than the third; first and second closely, finely rugulose, opaque; the third finely roughened at base; remainder of abdomen polished; hypopygium slightly surpassing apex of last dorsal segment; ovipositor subexserted.

Black; antennae entirely black; all coxae and trochanters, bases of anterior and middle femora, more or less of posterior femur, especially toward apex, apex of posterior tibia, and posterior tarsus more or less, blackish; tegulae black; wings strikingly white, stigma and metacarpus brown, veins hyaline except sometimes outer side of first cubital cell; venter of abdomen blackish, even at base.

*Male*.—Essentially as in the female except for the longer antennae, which are fully as long as the body, with even the apical segments more than twice as long as broad; legs slightly darker than in female.

*Cocoons*.—Yellowish-white, thin, solitary.

*Type-locality*.—Columbia, Missouri.

*Type*.—U. S. N. M. No. 50015.

*Host*.—*Celama sorghiella* Riley.

Seven females and three males (type, allotype, and eight paratypes) reared by Professor L. Haseman from the host mentioned, in October, 1921; one female reared by F. L. Thomas, in Cherokee County, Texas, from the same host; one female, likewise from *C. sorghiella*, reared by W. A. Baker, May 17, 1923, at San Antonio, Texas; and three females and six males reared by W. A. Baker from "webworm larvae" at Pierce, Texas, Sept. 24, 1923.

#### ***Apanteles bushnelli*, new species.**

Similar to *californicus* Muesebeck but with the posterior femora wholly black, the first tergite broader, and the first and second tergites more coarsely sculptured. From *betheli* Viereck, which it also closely resembles, it differs in having the propodeal areola weakly defined, the propodeum punctate rather than rugulose, and the abdomen less slender.

*Female*.—Length 3 mm. Head strongly transverse; face scarcely narrowing below, distinctly closely punctate, opaque; malar space distinctly shorter than the basal width of mandible; ocellocular line twice as long as the diameter of an ocellus, slightly longer than postocellar line; frons, vertex, and temples punctate and opaque; antennae about as long as the body, the three apical segments subequal and much shorter than the preceding.

Thorax somewhat depressed, a little broader than the head; mesoscutum entirely closely sharply punctate, opaque; furrow at base of scutellum distinctly foveolate; scutellum shiny, punctate except down the middle; polished area on lateral face of scutellum semicircular, extending only half way to base of scutellum; propodeum mostly punctate and opaque, with a more or less oval polished area at apex on each side of the middle, and with a weakly defined finely rugulose median areola; mesopleurum mostly smooth although definitely punctate anteriorly; posterior coxae only indistinctly punctate, subopaque; hind femora moderately broad; inner calcarium of posterior tibia about half as long as metatarsus; stigma more than twice as long as broad; radius originating slightly beyond middle of stigma and joining intercubitus in an even curve.

Abdomen narrower than thorax and about as long; first tergite nearly parallel-

sided, closely irregularly rugulose and opaque; second tergite strongly transverse, more than three times as broad at base as long down the middle, much shorter than third, completely finely rugulose and opaque, its posterior margin curved; third tergite delicately wrinkled at its extreme base; the remainder of dorsum of abdomen smooth; hypopygium attaining apex of last dorsal segment; ovipositor sheath slender, considerably longer than posterior tarsus and at least as long as the abdomen.

Black, palpi pale yellow; tegulae black; wings whitish hyaline; anterior legs yellow, with only the coxae black; middle and hind legs mostly black, the middle femur apically, the middle tibia and tarsus, basal half of posterior tibia, and base of posterior metatarsus, yellow.

*Male*.—Like female in all essential respects, but with the first tergite about twice as long as broad at apex and the second tergite less than twice as broad at base as long down the middle.

*Type-locality*.—Halsey, Nebraska.

*Type*.—U. S. N. M. No. 50016.

Described from two females and one male reared by L. G. Baumhofer from pine tips infested with *Rhyacionia frustrana* var. *bushnelli* Busck, July, 1929 (type and allotype), and August, 1928 (paratype). The paratype is from Nenzel, Nebraska. These specimens were reared in the Bureau of Entomology under Hopkins U. S. Nos. 18569-b (type), 18569-a (allotype), and 18570-b (paratype).

#### *Opius hydrelliae*, new species.

Runs to couplet 50 in Gahan's key<sup>2</sup> and is most similar to *americanus* Gahan. It is readily distinguished from that species, however, by having the ventral margin of mandible entire, by the presence of a transverse opening between clypeus and mandibles, and by having the third tergite mostly sculptured. From *suturalis*, which it also closely resembles, it is at once separated by the closely sculptured opaque propodeum.

*Female*.—Length 1.3 mm. Head transverse, about as wide as thorax; temples and cheeks convex; eyes not prominent; malar space not quite so long as basal width of mandible; face mostly smooth, minutely punctate laterally, very narrowly opaque along inner margins of eyes; antennae slender, a little longer than body, 22-segmented, the first flagellar segment more than three times as long as thick and longer than second.

Thorax compact; mesoscutum and scutellum smooth and polished; notauli represented merely by short impressions anteriorly; no median fovea posteriorly on mesoscutum; propodeum completely finely rugulose and opaque; mesopleurum polished, with a distinct foveolate longitudinal furrow and a little longitudinal roughening immediately below this furrow; legs very slender; stigma narrow, emitting radius well before its middle; first abscissa of radius shorter than petiole of first discoidal cell; second abscissa of radius a little longer than first intercubitus; recurrent vein entering base of second cubital cell;

<sup>2</sup>Proc. U. S. N. M., vol. 49, 1915, p. 72.

first brachial cell not distinctly closed at apex below; posterior wing very narrow; mediella slightly shorter than lower abscissa of basella; postnervellus wanting.

Abdomen about as long as thorax, widest on third tergite, where it is fully as broad as thorax; first tergite narrow at base, broadening strongly behind, scarcely longer than broad at apex, closely granularly roughened and opaque; second tergite more than three times as broad as long and sculptured like the first; third tergite about as long as second and slightly wider, the basal two thirds finely granular; remainder of abdomen smooth and polished; ovipositor sheaths scarcely exerted.

Black; antennal scape, mandibles, lower edge of clypeus, and palpi, yellowish; lower part of face and cheeks dark brown; legs including all coxae yellow, the tarsi more or less infuscated; wings hyaline, stigma and veins dark brown.

*Type-locality*.—Sacramento, Calif.

*Type*.—U. S. N. M. No. 50017.

*Host*.—*Hydrellia scapularis* Loew.

Described from six female specimens reared in the Bureau of Entomology under Sacramento No. 31564 by W. B. Cartwright. The number of segments in the antennae of the paratypes ranges from 21 to 23.

#### *Microbracon phyllocnistidis*, new species.

Differs from all other oriental species of *Microbracon* known to me in the delicate posteriorly divergent aciculations of the second abdominal tergite and the unusually short ovipositor.

*Female*.—Length 1.5 mm. Head about as wide as thorax, entirely polished; face strongly receding, flat, much broader than long; transverse diameter of impression between clypeus and mandibles not greater than distance from impression to eye; eyes broadly oval, prominent; malar space longer than basal width of mandible; ocelli small, the distances between them about equal to diameter of one of them; antennae slender, broken in type, 18 segments remaining, all flagellar segments more than twice as long as thick, the first three nearly three times as long as thick.

Thorax entirely polished; notauli faint; mesonotal lobes not elevated; scutellum nearly flat; propodeum polished, with a short stub of a median carina at apex and a poorly defined narrow longitudinal impression on basal half; legs slender; radius arising from about end of basal third of stigma and going to extreme apex of wing; second abscissa of radius about twice as long as first; first cubital cell much longer than first discoidal; second cubital narrowing apically; recurrent vein about as long as second abscissa of cubitus; length of marginal fringe of posterior wing nearly one third the width of wing; radiella wanting except for a short stub at base.

Abdomen hardly as long as thorax, narrow at base, strongly broadened on second and third segments, where it is a little broader than thorax; chitinous plate of first tergite longer than broad, entirely smooth, the anteriorly convergent grooved lines impunctate, the lateral margins of the plate parallel on apical two thirds, but converging somewhat at base; second tergite strongly transverse, three times as broad as long, the surface feebly longitudinally aciculate, the

posterior margin curving forward laterally and conspicuously emarginate at the middle; third tergite slightly longer than second, also weakly aciculate, the median aciculations strongly divergent posteriorly; fourth and following tergites not distinctly sculptured; ovipositor sheaths only slightly longer than first tergite.

Yellow; antenna dark brown, scape, pedicel, and two basal flagellar segments yellowish; legs entirely yellow; wings subhyaline, stigma and veins pale; abdomen weakly infuscated on middle of second tergite.

*Male*.—Very similar to the female, but with the abdomen much narrower and infuscated at apex, and the posterior margin of second tergite more weakly emarginate at the middle. The antennae are 20-segmented.

*Type-locality*.—Buitenzorg, Java.

*Type*.—U. S. N. M. No. 50018.

*Host*.—*Phyllocnistis citrella* Stainton.

Eight females and nine males reared by A. Voute. The number of antennal segments ranges from 16 to 19 in the female paratypes and from 20 to 21 in the male paratypes.

#### **Chelonus (Chelonella) audeoudiae**, new species.

Very similar to *rufiscapus* Cameron but apparently differing in the shorter antennae, in the rugulose punctate face, in the sculpturing of the mesoscutum and propodeum, in the unusually swollen posterior tibiae, and in having the abdomen more extensively pale at base.

*Female*.—Length 3.5 mm. Head very strongly transverse; temples receding from the eyes; eyes large, thickly covered with short pubescence; malar space shorter than clypeus; clypeus decidedly more than half as long as its apical width, finely punctate; face more than twice as broad as long, rugulose punctate; frons rugulose; vertex and occiput more finely sculptured than face; antennae 16-segmented, not so long as head and thorax combined, segments 10 to 15 not longer than broad; postocellar and ocellular lines subequal, twice the diameter of an ocellus; occipital carina strong.

Thorax stout, covered with short pubescence; mesoscutum punctate, with a low median longitudinal keel, and on the posterior middle with several short and coarse adjacent striae; notauli poorly defined; disk of scutellum broad, nearly flat, minutely punctate with a few larger punctures along the lateral margins; the short dorsal face of propodeum rugose, with a more or less distinct longitudinal keel each side of the middle, and the posterior lateral angles acute; posterior face of propodeum nearly vertical, irregularly punctate; mesopleurum rugulose punctate, with a few smooth vertical ridges below; stigma more than half as broad as long; basal vein a little sinuate; first abscissa of radius hardly longer than second; third abscissa straight; radial cell shorter than stigma; nervulus postfurcal by slightly less than its length; posterior femur considerably thickened beyond basal third; posterior tibia slender at extreme base, unusually swollen beyond, with numerous minute spines on the outer side; inner calcarium of posterior tibia more than half as long as metatarsus; posterior tarsus slender.

Abdomen hardly as long as thorax and a little narrower, broadly rounded at

apex, rugose striate on basal half, rugose beyond, most finely so at apex; two well-developed keels from lateral margins at base, converging strongly for a short distance and then running parallel to beyond basal third of abdomen; ovipositor concealed.

Black; scape red; legs red, the posterior coxae black above; wings hyaline; stigma and veins dark brown; abdomen with more than basal third testaceous, except for a blackish spot at middle of basal margin; remainder of abdomen black.

*Type-locality*.—Ngerengere, Tanganyika.

*Paratype-locality*.—Tsumeb, Southwest Africa.

*Type*.—U. S. N. M. No. 50019.

Described from two female specimens reared from *Audeoudia halica* Meyrick living in the seed capsules ("jumping beans") of Euphorbiaceae, and communicated by Dr. H. Sachtleben, of the Deutsches Entomologisches Institut, Berlin-Dahlem. The paratype has been deposited in that institution. It differs from the type in having all coxae black.

#### NOTOTHRIPS FOLSOMI, A NEW GENUS AND SPECIES OF THYSANOPTERA FROM THE UNITED STATES.

By J. DOUGLAS HOOD, *University of Rochester.*

Exactly twenty-seven years ago, Dr. Justus W. Folsom, known for his embryological work on the segmentation of the insect head, for his taxonomic studies on Collembola, and as the author of the first modern text-book of entomology, suggested to me that the Thysanoptera might be studied to advantage, and gave me a small collection of thrips which he had accumulated while a graduate student at Harvard University. During the years which followed, he and the late Charles A. Hart, both at Illinois, taught me the fundamentals of entomology, directed me in what was then a little-frequented byway of entomological endeavor, and firmly suppressed all near-attempts at premature publication. A superb artist himself, he stressed the superiority of illustrations over mere words in all morphological papers. In these days, when so many of the new specific names proposed are patronymics, it is perhaps necessary to state the foregoing in detail, the better to emphasize the appreciation felt and the signal compliment intended in dedicating *Notothrips folsomi* to him.

#### NOTOTHRIPS, gen. nov.

(*νῶτος*, the back—in allusion to the dorsally pigmented and sculptured body;  
*θρίψ*, a wood worm.)

Dorsal surface of entire body roughly sculptured, excepting in the area of